

Patent claims

[Amended/New-Entered under PCT Article 19 on December 16, 2004]

1. A metronome for displaying the tempo, time and the subdivision of the time, of pieces of music or movement rhythms with a battery-operated voltage source or with an electrical mains connection, characterised in that it includes a display for the optical display of a movement which describes an arc which includes a horizontal, uniform movement component as well as a vertical, accelerated movement component and thus describes a trajectory-parabola-like arc, and that means for activating the display are present so that the optical movement runs to and fro at a settable frequency.
2. A metronome for displaying the tempo, time and the subdivision of the time, of pieces of music or movement rhythms with a battery-operated voltage source or with an electrical mains connection according to claim 1, characterised in that means are present for selective electrical production of sounds for the dynamic acoustic marking of the turning points of the movement and for the selective further acoustic subdivision of the time intervals between the turning points of the movement, as well as that a sensor and an electronic circuit with a software for detecting acoustic impulses are present, by way of which an optical or acoustic display of rhythm may be reproduced in dependence on settable run-ahead tolerances or settable run-behind tolerances of the rhythms recorded via the sensor.
3. A metronome for displaying the tempo, [beat] time and the subdivision of the time, of pieces of music or movement rhythms according to claim 1, characterised in that the display includes a row of discrete light sources (2) which are arranged along a trajectory-parabola-like arc (3), and that means for activating these light sources (2) are present, by way of which the light sources (2) may be activated in a manner such that they produce a running light which runs to and fro along the light source row at a settable frequency, and further that means are provided for the selective electrical production of sounds (tones) for the acoustic marking of the turning points of the running light and for the selective further acoustic subdivision of the time intervals between the turning points of the running light.

4. A metronome for displaying the tempo, time and the subdivision of the time, of pieces of music or movement rhythms according to claim 3, characterised in that the discrete light sources (2) which are successive in the row are arranged at different distances to one another, so that with time intervals between the illumination of the individual light sources (2), said intervals remaining the same, the trajectory (3) of a body may be simulated optically which with regard to the vertical component of the optical movement undergoes a negative acceleration in the upwards movement and with the downwards movement undergoes a positive acceleration, whilst the horizontal component of the optical movement is uniform.
5. A metronome for displaying the tempo, time and the subdivision of the time, of pieces of music or movement rhythms according to claim 3, characterised in that the discrete light sources (2) which are successive in the row are arranged at constant distances to one another, so that with the successive activation at different time intervals of the light sources (2) which are successive in the row, a running light may be produced which optically simulates the trajectory of a body (3) which with regard to the vertical component of the optical movement undergoes a negative acceleration in the upwards movement and with the downwards movement undergoes a positive acceleration.
6. A metronome for displaying the tempo, time and the subdivision of the time, of pieces of music or movement rhythms according to one of the claims 3 to 5, characterised in that the means for activating the light sources (2) include a microprocessor by way of which the light sources (2) which are successive in the row may be activated with such time intervals that a running light may be produced which optically simulates the trajectory of a body (3) which with regard to the vertical component of the optical movement undergoes a negative acceleration in the upwards movement and with the downwards movement undergoes a positive acceleration.
7. A metronome for displaying the tempo, time and the subdivision of the time, of pieces of music or movement rhythms according to one of the claims 3 to 6, characterised in that it comprises a setting display (4;8) with program input buttons (5-7;9;10-14) for the setting and the display of the number of turning points of the movement or of the running light per minute as well as the [beat] time type and the type of acoustic subdivision of each [beat] time.

8. A metronome for displaying the tempo, time and the subdivision of the time, of pieces of music or movement rhythms according to one of the claims 3 to 5, characterised in that it comprises a three digit counter (4) for setting and displaying the number of turning points of the running light per minute with a separate input rotary knob (5-7) for each digit location, or with a separate plus/minus button, and that it furthermore comprises an input rotary knob (9) or a plus/minus button for the selective setting of a [beat] time type with an associated digital display (8).
9. A metronome for displaying the tempo, time and the subdivision of the time, of pieces of music or movement rhythms according to one of the claims 6 to 8, characterised in that by way of a suitable input at the program input buttons (5-7;9;10-14), in a selective manner acoustic tones of different frequencies, timbres and volumes may be superimposed on the optically simulated movement, controlled by the microprocessor, so that a tone may be started whose volume or intensity increases over the movement of the running light over the individual light sources (2) of the arc (3) or over a part of these, and on reaching the outermost light sources of the arc achieves its maximum or intensity centre, and fades after this.
10. A metronome for displaying the tempo, time and the subdivision of the time, of pieces of music or movement rhythms according to one of the claims 5 to 9, characterised in that for detecting rhythms which are produced by the user, a symmetrical or asymmetrical tolerance to the predefined metronome beats may be set in a manner such that when these are exceeded by the user, cumulated measurement results as well as instructions for accelerating or slowing down the user-rhythm may be produced optically or acoustically via a display or loudspeaker.
11. A metronome for displaying the tempo, time and the subdivision of the time, of pieces of music or movement rhythms according to one of the claim 2 to 10, characterised in the dynamics of the acoustic marking may be set according to timbre, sound hardness as well as according to the linear or dynamic increase and attenuation over settable time periods before or after the beat to be displayed.

12. A metronome for displaying the tempo, time and the subdivision of the time, of pieces of music or movement rhythms according one of the claims 2 to 10, characterised in that via a microprocessor with software for detecting rhythms, a symmetrical or asymmetrical tolerance to the predefined set metronome beats may be set in a manner such that when the user exceeds these, cumulated measurement results as well as instructions for accelerating or slowing down the user rhythm may be reproduced optically or acoustically via a display or loudspeaker.